CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society Of America

Vol. XI DECEMBER, 1939 No. 6

Parodia maassii

Prize winning photograph by W. H. Abercrombie, Jr., in a recent local competition of the Southwest Cactus Growers. The picture shows how an unsightly graft can be eliminated in a photo.

CACTUS AND SUCCULENT JOURNAL

Published and Owned by the Cactus and Succulent Society of America, Inc., Box 101, Pasadena, California. A monthly magazine to promote the Society and devoted to Cacti and Succulents for the dissemination of knowledge and the recording of hitherto unpublished data in order that the culture and study of these particular plants may attain the popularity which is justly theirs. Subscription $3.00 per year. Foreign $3.00 per year by international money order. Membership in the Cactus Society free with subscription. Mail application to SCOTT HASELTON, *Editor*, Box 101, Pasadena, Calif. *Editorial Staff*: THE ENTIRE SOCIETY. Entered as Second Class Matter at Pasadena, Calif., under act of March 3, 1879.

Vol. XI DECEMBER, 1939 No. 6

EDITOR'S COLUMN

With this issue, the last in 1939, your Editor and Officers of the Society extend to every member their best wishes of the season and trust that the New Year will bring peace to the world again. We wish to thank the many who have sent their greetings to us and return their kind thoughts a thousand fold.

We are entering the New Year full of ambition and hopes that we may better serve our members. We can boast of the largest membership in ten years even with the foreign situation which has affected that part of our list; 130 of our members are in foreign countries including Egypt, Africa, Turkey, and all the European countries.

We have a number of interesting talks which have been given before various affiliates and we plan to publish some of the best as a series. We need material from our members and the life of the JOURNAL depends upon your cooperation. One of the greatest needs is cultural articles from the eastern states. Won't you tell us how you started collecting, how you grow your plants, which kinds you can flower, mistakes you could avoid after your past experience, etc.?

We are sometimes criticized because many of the contributions are by one or a few of the members. It is those loyal contributors who rally to the editor's pleas and keep our JOURNAL up to its present size.

We need an article on nematodes, and whether or not they are as detrimental as supposed. We need an article on window culture; and one on Epiphyllums, their culture and why they are gaining in popularity. The commercial men should write on bowl work and how to plant and care for them. We will welcome suggestions for a national competition of the best cactus or succulent garden or collection; a few plants, well grown may be superior to a large collection; prizes will be deposited with a committee who will judge the collections from photos and local representatives of the committee.

We are progressing with a series of illustrated articles on the various genera of cacti and the other succulents and understandable keys. These will tell why a plant is a Mammillaria and show detailed drawings to illustrate it. New photos will be taken to show the habit, close-up of the plant and one of the flowers, fruit, etc. This should be as important a contribution as the Britton and Rose reprint and the Glossary.

Send in your contributions and take an active part in your Society and the JOURNAL and let's make this our best year.

SCOTT HASELTON.

FROM NEW YORK

Have noted in your August issue that you have a suggestion to print a key of species for all succulents. This is a fine idea, but can be amplified I believe.

In the first place you have recently printed Britton and Rose and the Nomenclature Committee is at present at work to complete an amplification of this work. Why not start on succulents other than cacti first, in view of this fact as follows:

1. Divide the field into units—the size of the units would, of course, depend on whether a genus, a family, or only a part of a genus were succulent in habit.
2. Assign these units to various groups as projects to work out. Clubs could appoint committees to do this work as their share toward keeping the Society alive.
3. Let each Club submit its report to a central board to pass upon.
4. Print the lists of the keys as space is available each month.
5. Give prizes of free bound complete keys to those doing an acceptable job.
6. Non-succulent members of genera, families, or other groups should be included in the keys. Some difference in designation can be adopted to show which are succulent and which are not.
7. In cases where recent fundamental work has been completed, as I understand is true of the Mesembryanthemums, little or no work will be necessary and such units need not be farmed out. The central board could determine all such matters.
8. Print colored pictures of type plant or make water colored prints similar to the illustrations in van Laren's book on cacti. These could be sold to those interested to go into a supplementary set of sheets furnished to match the Keys. This could be a Society project or a private one.

FRED L. SMITH.

EDITOR'S NOTE: We are looking for suggestions that might be used to follow the Glossary. Now is the time to send them in.

CEREI THAT DO NOT GROW

In some cases the growing tip (or top) has been blighted or dried and formed a hard callus. By removing the callus I have found that in most cases, the growing tip will form again and push through.

DR. BERNHARDT, Brooklyn, N. Y.

Your JOURNAL must be widely read. I have had, through it, letters from a dozen states, British Columbia, England, Kurt Backeberg of Germany, and even New Zealand.

Good luck for the New Year.

MARION S. LAHMAN.

Apicra spiralis approx. x0.45

Notes on Apicras

By J. R. BROWN

Apicra spiralis (L.) Bak. in Journ. Linn. Soc. XVIII (1880) 217, in Fl. Capens. VI (1896) 331; Berger in Pflanzenr. IV. 38. (1908) 117.—*Aloe spiralis*, L. Spec. (1753) 322.—*Aloe imbricata*, Salm-Dyck, Monogr. (1836-49) sect. I fig. 1.

Plant with many densely leaved stems, stems erect, gradually becoming decumbent with age, to 30 cm. in length and 3.5-4 cm. in diam. Leaves erect, crowded, smooth and deep green in color, in five spiral rows, lanceolate-deltoid, acuminate, and with a very sharp tip, 3 cm. long and 15 mm. wide towards the base, face of leaves almost flat, slightly concave in the younger leaves, back of leaves rounded and from about the middle to the tip obliquely keeled, the margins and keel roughened with very minute deltoid teeth.

Peduncle slender, the raceme with 30 or more flowers; pedicels short; bracts lanecolate-deltoid, 5-6 mm. long; perianth about 13 mm. long and somewhat hexagonal, of a peculiar, rough, white, spongy texture, green lined, the very short, dull yellow segments slightly spreading and obtuse.

One of the long known So. African succulents and introduced to Europe almost 200 years ago without locality.

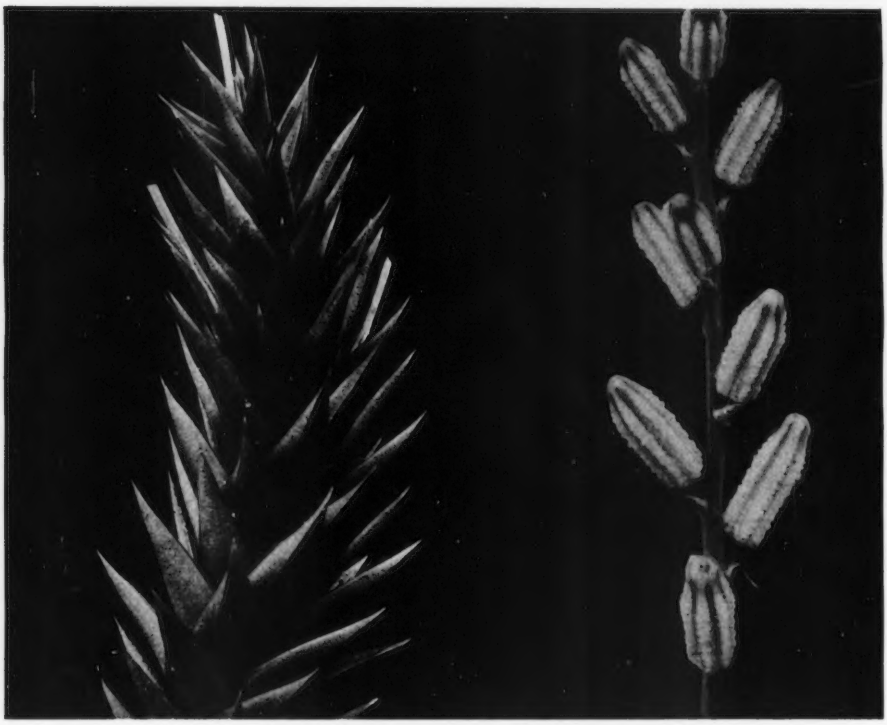
Plants were received by the writer from So. Africa several years ago, but without definite locality.

The flowering period in So. Calif. is during September and October.

This interesting Apicra has been called the

"rough flowered Apicra" and the flowers are very distinct from the usual smooth flowers of other known Apicras. The largest plant seen here is 45 cm. in diam. and with the older stems decumbent.

The illustrations show a plant approx. x 0.45, a portion of the stem nat. size, the flowers, of which only the lower one is open, approx. x 2.



Left: *Apicra spiralis* showing a portion of the stem natural size.
Right: Flowers twice size showing spongy texture.

MR. BOWIE, Philadelphia:

Your question "Do seedlings lie dormant?" is rather hard to answer, not knowing the age of seedlings or the conditions under which they are grown. After cactus seeds germinate, they retain the small globular form for a period of several days to several weeks before the first spines emerge. This growth is hastened by warmth (around 75 degrees F.) and a good soil mixture composed of about equal parts of well-decayed leafmold, good garden loam and sand which should be moistened lightly and as often as it dries out. If your seedlings are older, it is quite normal for them to lie dormant during the winter months, particularly in your section of the country where they cannot receive the required amount of sunlight at that time of year. They should begin to grow in warmer weather.

As to your second question, "Should they be fertilized?" The answer is no, not during winter months nor at any other time when they are dormant. After seedlings are a year old most kinds may be fertilized when they show signs of growth as indicated by appearance of new spines in the top of the plant. Fertilizer should be used very sparingly and it is best to apply it in a very weak liquid solution. Liquid manure may be used or about a teaspoonful of a well balanced commercial fertilizer may be placed in a gallon of water and this can be used for watering. The fast-growing Cereus types respond quite readily to fertilizer during warm weather but many of the slow-growing desert types do not seem to like fertilizers. We find it better to transplant seedlings into fresh soil about two or three times a year rather than use fertilizers. They respond quite readily to transplanting, preferably in early spring and during the latter part of the summer, without being disturbed during the winter months when they should be given less water and allowed to become dormant until another growing season.

R. W. KELLY.

BAILEY HORTORIUM SUGGESTS CLEARIFICATION OF CACTUS NAMES

By GEORGE H. M. LAWRENCE

In the recent or current trade lists of dealers having cacti for sale or distribution appear many Latin names that the writer has not been able to locate in the botanical literature. Such a situation is present in nearly all of our horticultural literature, but nowhere has the practise of giving a plant an illegitimate Latin binomial been so apparent as among the distributors of succulents. It is not to be understood these names are coined illegitimately by intent, for undoubtedly their makers are unaware in many instances that established regulations prescribe definite procedures that must be followed.

Botanists the world over are now essentially agreed on the procedure whereby a plant thought to be new to science is given its name. In brief, it is agreed that the species name chosen shall not have been used before for any plant of that genus and that the name must be published in an available publication and be accompanied by an ample description. Since January 1, 1935, original descriptions have been required to be in Latin to be legitimate. This seemingly academic requirement is seen to be within reason when it is understood that this original description must be available and understandable to botanists and horticulturalists of all tongues irrespective of the type of alphabet they may use.

A plant may have only one valid or legitimate name. When a horticulturalist, nurseryman or plant specialist recognizes a plant as new, and thinks it to be worthy of a name, he must recognize the existence of, and follow, the rules of botanical nomenclature in giving his plant a new name in the same manner as would a botanist. In other words, he as a horticulturalist, has no license to print a new Latin name in his catalogue or list, label it as a "new species" and expect that name to be accepted.

The names of all plants are composed of two words, a generic name (for example, *Opuntia*) and a specific name (*compressa*). These two names combined (*Opuntia compressa*) are referred to as a binomial and for the sake of uniformity are written in Latin. The varietal name of a plant may be in Latin or in the vernacular language of the person naming it. Only when the varietal name is a Latinized name and published in the legitimate manner outlined above is it accorded botanical recognition.

The majority of dealers and specialists in succulent plants are acquainted with the fundamentals of botany and of plant nomenclature. In many cases it is probable that the lists containing Latin names which are not known to have been associated with botanical descriptions of the plants in question, are so distributed in ignorance of the requirements. It is not reasonable to expect a dealer to check through the botanical literature to determine whether every name he receives with a plant is valid. He must rely largely on the integrity of the person from whom the plant was received. In many cases, however, the critical dealer will refer the name to a standard work on the group in question. In the case of succulent plants this is often impossible because new and good species from the wild are introduced to the trade and their names are distributed before there is any reliable horticultural reference accounting for them. Plant names not found in reliable horticultural works should be checked carefully for accuracy of name before using them.

There is available in most libraries of botanical importance, in almost all of the botanical departments of our colleges and universities, a work known as Index Kewensis, first published in 1895 with supplements appearing at five-year intervals through 1935. In this work are listed alphabetically by genera, all of the species names known to be published to date in the world for the seed plants With each specific name is given the author of that name and the source of publication. By reference to this work we can learn what names have been published. It does not inform us whether the name in question is legitimate, nor whether the plant so named is a good species. Such items are matters for further study or opinion.

The writer, in his studies of cacti genera and their many species now in cultivation, has encountered in various trade lists more than one-hundred of these names that are not known to have been described botanically. They have not been found in Index Kewensis. Such names are treated by botanists as *nomina nuda;* naked names, unclothed and unsupported by adequate description. They are referred to as "listed names;" names known only from the lists. There are 103 such names appended to this article; a

very large number in proportion to the number of known cacti species.

These listed names may be accounted for in several ways, but the explanation may not justify their existence. Many of them are mere variants which have been advertised as binomials, using for the species name that name by which the plant was known in the category of variety. Others represent illegitimate transfers to relatively new genera, carrying with them the species name by which they were known in the old genus. Some of them are horticultural hybrids which have never been legitimately described, nor are they always of known parentage. (This explanation undoubtedly will account for the several Epiphyllum binomials in the appended list and for which adequate descriptions and parentage are needed in order to clear the name.) A few may represent new species which have not yet been described or whose descriptions have appeared since December 31, 1935, the dead-line for inclusion in the last supplement of Index Kewensis, and not seen by the writer.

The practice of "making" these illegitimate names should be discouraged by all interested in a stable plant nomenclature. It adds to the confusion of existing names and eventually serves to decimate the understanding between botanists and horticulturalists.

The object of this article is to bring to the attention of cacti enthusiasts the great number of cacti names which are not known to have botanical standing. It is hoped that anyone knowing the identity of any of the plant names in this list will inform the writer accordingly. Any of these names, to have valid standing, must have been legitimately published and any information as to the source of such publication will be cordially accepted.

LISTED NAMES OF CACTI

Arequipa Weingartiana
Ariocarpus McDowellii
Astrophytum nuda
stellata
Cephalocereus salvadorensis
sublanatus
Cereus Bankianus
compispinus
Faischeroa
Herreraanus
longispina
microcarpus
Ostenii
usitatus
Corryocactus procumbens
Coryphantha jaumavensis
Echinocactus Davisii
Knebelii
lophoroides
mimulosus
Moellerii
nigriareolatus
Echinocereus armatus
longispinus
melanocentrus
Echinopsis Berlingii
Fischeri
mia
Rotheriana
Schwantesii
Epiphyllum bella
brasiliensis
hermosum
lilacinum
Pfersdorffii
roseum
Schlumbergerianum
Epiphyllum speciosum
Urayi
Frailea pseudopulcherrima
Gymnocalycium caespitosum
michoga
occultum
rhosantherum
Urselianum
Harrisia rostrata
Lemaireocereus demixta
gladiger
Lobivia nigra
Malacocarpus Hennisii
Mammillaria aljibensis
asperispina
bella
candicans
dedicata
Edmundtsiana
erythrocarpa
Essaussieri
ferro-rubra
fortispina
Hildemanniana
Hookeri
Kelleriana
Louizae
macrocarpa
Martinezii
Mulleri
nigra
pseudocrucigera
pseudoechinus
rubrispina
Shurliana
tarajaensis
Woodsii
Neoporteria Stumeriana
Notocactus nigrispinus
Opuntia Andeada
bala
bellaperone
bondata
cenesa
Fisheri
florida
jocoquilla
microcalyx
Orpetii
quiscalora
Parodin tabularis
Selenicereus viridicarpus
Solsia pseudopectinata
Stenocactus carneus
densispinus
esperanzensis
grisacanthus
longispinus
polylophus
Thelocactus longispinus
Trichocereus Knuthianus
tarjensis
Wilcoxia australis
tamaulipensis

EDITOR'S NOTE: Mr. Lawrence has clearly stated the growing confusion in cactus names. We feel sure that dealers and Society members will cooperate and write to the author who, we are sure, will publish the results of this survey in the JOURNAL. Please address Mr. George H. M. Lawrence, Bailey Hortorium, Ithaca, N. Y.

IMPORTANT NOTICE: On January 21, the first unit of the Administration Building will be formally opened in the Desert Botanical Gardens in Papago Park, near Phoenix. Plan to be there on this memorable occasion. The next JOURAL will bring you the interesting Mexican trip by the Director of the Gardens, George Lindsay.

BOOK REVIEW
"Notas Sobre Cactaceas Argentinas"

The School of Pharmacy of the University of Cordoba, R. A., has issued Archive 9, under the direction of Prof. Carlos C. Hosseus, Dean of Botany: 152 pages, 6x9, 2 charts and 38 illustrations.

The Argentinean species of cacti are defined under the Rosean classification with the addition of such new genera as are justfied by the facts defined by this thoughtful botanist. Each species is considered in its full range with tables of latitude and longitude, altitude, precepitation, temperature, and soil.

The careful consideration of all conditions bearing on range and ecological variations shows clearly a deeply trained mind and proves conclusively his conclusion of valid species and his rejection of species described from mere varieties.

The genera *Pereskia, Maihuenia, Maihueniopsis, Opuntia, Cereus, Monvillea, Stetsonia, Trichocereus, Harrisia, Cleistocactus, Rebutia, Chamaecereus, Lobivia, Echinopsis, Acanthocalycium, Denmoza, Gymnocalycium, Malocarpus, Frailea* and *Parodia* are considered and carefully analized.

Parodia is accepted by Dr. Hooseus in place of *Hickenia* of Britton & Rose because Lillo in 1919 used *Hickenia* as a name for a genus in the family Asclepiadaceae which preempts the name from further generic use in any family. *Parodia* was proposed by the great Argentinean botanist Spegazzini for the plants referred to *Hickenia* by Britton & Rose. The name *Parodia* honors Doctor Domingo Parodi, one of the first investigators of the flora of Paraguay.

The genus *Austrocactus* to which Britton & Rose assigned one species, *A. bertini,* is rejected as unjustified since the prime character of the genus as noted by Britton & Rose is red stigma lobes and hooked spines; these characteristics appear in other genera, notably *Malocarpus; M. dusenii,* a synonym for *M. patagenicus,* has red stigmas and hooked spines.

Where changes are made in existing classifications or in old or new species, a thorough discussion of the reasons for such changes are given and these reasons are always logical.

The range of species and the ecological factors of altitude, climate, and soil which always correspond with locations selected by any species, is clearly indicated and the ecology exemplified in this masterly work is the greatest step forward in the critical scrutiny of members of the family Cactaceae.

Unfortunately, the printing of the rather poor illustrations leaves much to be desired, but despite this handicap the book has exceptional value for any cactophile whose knowledge of the Spanish, makes the work intelligible to him.

WM. T. MARSHALL.

EDITOR'S NOTE: Would some Spanish student volunteer to translate sections of the above book so that it can be of greater use to more of our members.

PRESIDENT'S MESSAGE

The Cactus and Succulent Society of America originated eleven years ago by the action of Mr. Frick, Dr. Houghton and the few other cactophiles in uniting for study of their hobby. Almost from the start the JOURNAL, under the editorship of Scott Haselton, provided the backbone of the organization.

At its inception the Society was strictly a Los Angeles group, but it rapidly spread throughout California and for a number of years the membership was centered here.

Today our organization is nation-wide and, while the California membership still greatly outnumbers that of the next four largest states in number of subscribers, it becomes increasingly evident that a radical change in the set-up of the executive department is due.

We have tried to give representation to our Eastern members by having a number of prominent representatives from that section on the Executive Board, but never has a member so elected attended a Board meeting and seldom have we had a suggestion from them. Recently we have appointed Regional Vice-Presidents for all sections of the country and this has effected closer relations.

As a California corporation, the headquarters must of necessity be in Los Angeles, but it is felt that an annual convention to which each affiliate should send a representative should be convened and we plan to hold the first of these conventions in June or July of 1940 and I will welcome suggestions as to the most central point available for this purpose.

The city selected should have an active affiliated group and this group should have available a club room or meeting place suitable for the purpose.

Two days will suffice for the meetings and the host group can plan such garden tours, social meetings, etc., that seem advisable and still allow sufficient time for two meetings a day for the convention.

Clubs interested in holding this first convention in their city should communicate with me at once as work on the agenda of the convention is now being planned and more details will be forthcoming in an early issue.

We welcome to affiliation this month two new organizations, The Denver Cactus and Succulent Society whose interesting notes on activities appeared in the November issue and the Cactus Study Club of Warren, Ohio.

Members in the vicinity of these new affiliates can get in touch with the officers of the clubs by writing to me and I strongly urge all cactophiles within reach to become members of an affiliated group for the wonderful help each member can extend to his fellow.

How about Dallas, Texas, forming an affiliate?

WM. T. MARSHALL.

GREENHOUSE CONSTRUCTION

By MR. STANFORD LEWIS, Seattle, Washington

I realized being married to a cacti enthusiast meant that the first move when we bought a home of our own would be the planning and building of something that would serve as a greenhouse. I eyed the back yard for the best spot to start construction and decided that the back of the garage seemed to lend itself most satisfactorily to our many needs—faced south with nothing to obstruct the sun's rays from east to west—while the garage itself would act as a buffer against cold winter winds.

We wanted it to be as compact as possible with the shelves inside to be not more than two feet wide—this to make it less trouble to reach the plants furthermost away from you. Also, we, that is Mrs. Lewis, wanted a work table to do her transplanting and grafting on so we planned a two and one half foot table. The shelves being two feet wide allowed for a two foot aisle making the house six and one half feet wide. A measurement of the garage gave us ten and one half feet over all in length.

With those plans before us we moved the shrubbery and leveled the ground for the foundation. I placed four by four timbers on concrete blocks supporting the four corners and nailed strips of tar paper on the ground to prevent rot. Then I built a framework seven feet high and ten and one half feet long against the garage consisting of two by fours bolted through the siding. I found a two foot pitch on the roof adequate—this making the lowest point five feet high. Now I placed greenhouse rafters twelve and a quarter inches apart to form the roof and sides. Those were nailed and fastened with galvanized angle-irons. I then used siding two and one half feet up from the base leaving an opening for a two by six door. I put the plant shelves across the south and east side about two feet high—this because Mrs. Lewis insisted the plants looked better when looked down upon. Of course the work table is a more convenient height and was hung on hinges against the garage wall so that it could be dropped when not in use. All of the framework received a coat of one half linseed oil and one half turpentine to protect against moisture—then three coats of white paint.

I heaved a sigh of relief at this point for our greenhouse was beginning to take shape, but I little realized that the tedious part of this undertaking was yet before me. I bought one hundred and fifty panes of twelve by twelve inch greenhouse glass and placed each pane with a one inch overlap securely held in place with staples and forty pounds of commercial putty. I left the center space unglazed to accommodate a hinged ventilator which can be opened to any degree desired. When this was finished and two coats of paint applied over the putty all that remained were inside finishing touches. I used crushed red brick as flooring.

We built this greenhouse at an approximate cost of $60.00. This, of course, does not include the heating plant which when complete will be a hot water system installed in the garage and piped through under the shelves.

EDITOR'S NOTE: After years of contact with growers in all parts of the country we have concluded that every grower should endeavor to arrange for himself a glassed-in alcove window, a lean-to glass house, a heated frame or a glass-house. Until one has a fitting place for his more tender succulents he is at the mercy of changing weather conditions and seldom sees succulents at their best. We are interested in your solution of the housing problem and it may help others to prevent loss of plants and to see the wonderful flowers.

THE GLOSSARY

This installment completes the "Glossary of Succulent Plant Terms" and our readers thank Mr. Wm. T. Marshall and Mr. R. S. Woods for this valued work. As Britton and Rose reprint has helped the scientific minded so this Glossary has helped the beginners and students. There is no suitable expression that can begin to thank these co-authors who have put so much work into this Glossary.

The following issues of the JOURNAL contained installments: March, April, May, July, September, and November, 1938; January, March, May, August, September, October, November, and December, 1939. From these fourteen issues, the center section can be removed and bound into a 112 page book. Do not send in your sections for binding until your JOURNALS are bound in June; at that time you will see the notice. There are no plans to print in book form and the Glossary can be obtained only from the JOURNALS which are available at 25 cents each, while they last.

TO CACTUS LAND

Early the morning of September 2, my father, mother, sister, and myself started from Kansas City on a vacation that was to take us to "cactus land." We decided to cover the distance to Texas as quickly as possible. We spent the first night near Oklahoma City. We left early Sunday morning on highway 66 and headed for Amarillo, Texas.

At Amarillo, we took highway 87 to Canyon and then visited the Palo Duro Canyon. We were driving along on a seemingly level country when all of a sudden the bottom seemed to drop out and there before our eyes appeared the canyon with its many colored, many formed rock walls before us. We camped at Hales Center that night. About the only types of cacti noticed here were of the Opuntia family, with a few Echinocereus here and there.

We left Hales Center early Monday morning and headed for Van Horn. At Van Horn we visited Fred Clark at his Texas Cactus Gardens. He had many nice plants, most of them native of the Big Bend country and the mountain region around Van Horn. He told us of his experience with the roots on collected plants. He said a plant had a much better chance of living if the old roots were cut off and the plant rerooted. Mr. Clark was perhaps much amused when he told us what a "spoon cactus" was. Our conception of the plant was far removed from what the plant really was. Throughout the day we were really in the cactus country. Fields of Opuntias of the flat padded types, *Opuntia imbricata,* and many Echinocereus could be seen from the road. Some of the smaller types such as *Escobaria tuberculosa,* and *E. dasyacanthus* could be located if you got out and looked for them. Agaves and kindred plants were everywhere. We camped at Lobo Monday night.

Tuesday morning we went to Marathon, Texas. Here we visited A. R. Davis. We secured *Dudleya albiflora* from him. Some of his plants were still in bloom. This species is native to Texas. He had an *Acanthocereus pentagonus* in bud at the time. After leaving his place we headed for the Chisos Mountains. Once we were on the Big Bend State Park road cacti could be seen almost everywhere you looked. Ocotillo (*Fouquieria splendens*) which we had noticed around Van Horn now began to appear in large numbers. Long stretches of uninhabited country covered by cacti greeted our eyes everywhere. Sand dunes and country with little if any vegitation on it were seen. We camped by a spring on this side of the Big Bend State Park that night.

Wednesday we left on foot to study cacti as it grows in its native home. A trip was taken into the mountain country. Here we noticed *Hamatocactus longihamatus* in many sizes. *Echinocereus stramineus* and *E. conoideus* were seen in clumps more than 3 feet across. Many of the various types of cacti of the Big Bend were encountered. As we were camped at 4,100 feet elevation and as the way was very rugged, one could not take a very long trip without tiring considerably. Deer were encountered on three different occasions. Only two rattlesnakes were seen and these did their best to keep out of our way. Thursday was spent in a like fashion.

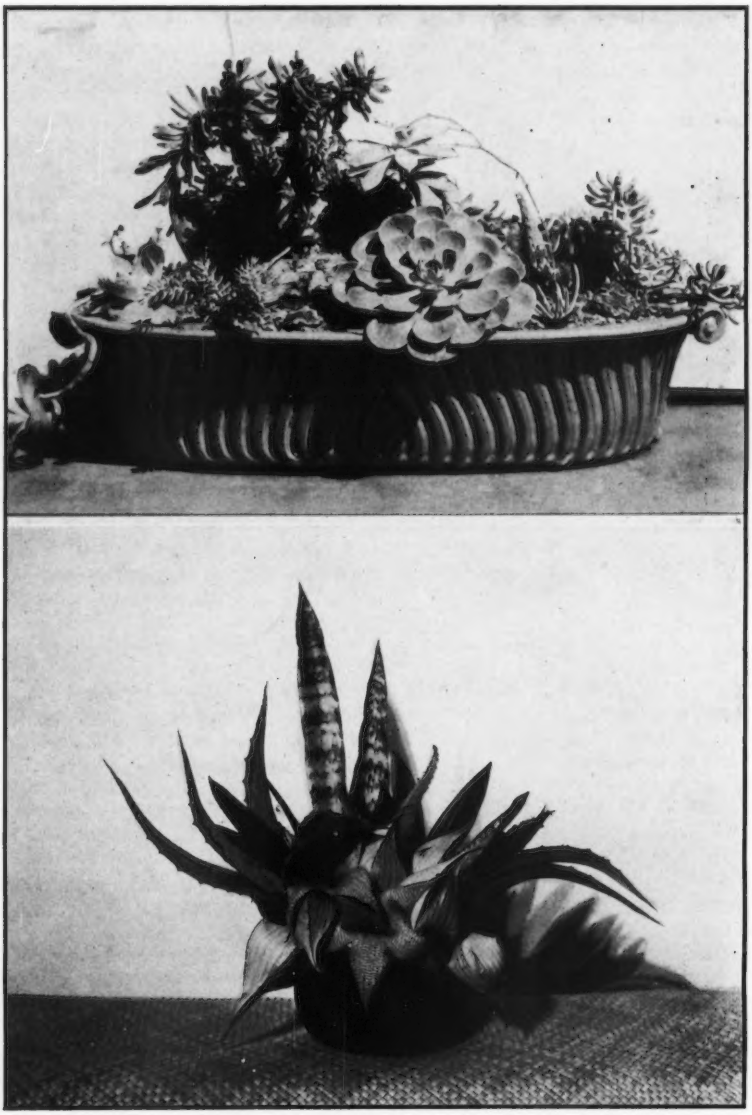
Friday morning we headed back to Marathon. At one place we noticed a group of one type of the *Thelocactus bi-color* growing from the crevices of an almost solid rocky slope. We could not help but wonder how the plants could live under such conditions. This was the blooming season for *Ariocarpus fissuratus.* We headed for Del Rio but did not get there as we stopped several times to view cacti along the way. We camped at Comstock.

Saturday morning we left for Laredo, Texas. On the way into Laredo we noticed a few different types of cacti probably of the *Echinocereus* family. *E. enneacanthus* was recognized. Small shells were noticed scattered on the ground at various places. It rained as we approached Laredo and we missed seeing the Lowry garden. At Laredo we visited the garden of the Texas Cactus Growers; Mr. Jones had visited our place while he was on one of his trips. Mr. Jones and Mrs. Shiner-Jones both went about through their place and pointed out many plants. They have a marvelous collection especially the Mexican varieties. Their collection is said to number about 1,400 varieties. We walked across the bridge into Mexico and bought a few things. We decided against going to Edinburgh because we were now heavily loaded. We headed for San Antonio and by driving quite late we got to the edge of San Antonio that night.

Sunday morning we visited the Lawson Cactus Garden. Mr. Lawson really has a fine collection of plants. We were especially impressed with his Mexican plants. We then visited the sunken Garden at San Antonio. That night we camped by the Llano river.

Monday we drove to Eastland, Texas, and Tuesday morning visited the Novelty Plant and Pottery Company. The Quinn family proved to be very fine hosts and took a good deal of their time to show us about when they were really busy. We then headed home by way of Kiowa, Kansas, where we stopped to visit a ranch near there. Late Thursday we arrived back in Kansas City, weary, but glad that we had made the trip.

ROBERT W. ROSE
Quality Hill Cactus Home
Kansas City, Mo.



Above: A succulent arrangement in color harmony and line. *Below*: Mrs. Moir's prize winning arrangement in the Hawaiian Flower Show. Note the leaves of *Sanseveria, Agave, Bryophyllum* and Stapelia flowers.

RANDOM THOUGHTS FROM HAWAII

As we walk through the garden, we notice that the large toads, imported from Puerto Rico to eat the bugs that bother the sugar cane, have found a cafeteria in the Stapelia flowers that draw the flies by their odor. Isn't it wonderful that toads from Puerto Rico eat flies in African flowers in a Hawaiian garden!

I use three or four thicknesses of waxed paper while I handle Opuntias covered with glochids. Grasp the plant firmly, that's the secret. It saves the hands a lot, and does not damage the plant.

I am happy to report that the white milk from *Euphorbia lactea* does not cause blindness. One of my boys got a lot of juice in his eye while trimming one, and after going to the doctor who gave him drops and advised cold compresses, only suffered severe smarting of the eye.

When planting Aloes, or in fact any plant, I always trim the roots back to about two inches from the main stock. I find they recover more quickly.

Mynah birds often steal the white hairs of the Old Man Cactus for their nests.

White Yucca blossoms are lovely worn in a girl's hair. They are so waxy and they last all evening.

These desert plants get under one's skin in more ways than one! MRS. HECTOR MOIR, Kauai, T.H.

Mr. Charles R. Cole examines *Opuntia compressa* growing near Cincinnati, Ohio.
Photos courtesy Times Star.

I LIKE CACTUS BECAUSE—

They are a product of America. As such, they seem to be an embodiment of what the peoples of the Americas will be in the years to come. Each going his own way and developing entirely different from his relatives but staying a part of his clan, developing and improving his neighborhood for the traveler to enjoy as well as he, his, and his neighbors; cheerfully enduring hardships and privations, rising from catastrophies such as Chicago and San Francisco experienced, and continuing his family that they may enjoy more than he had the opportunity for. Always onward for a fuller life. The CACTUS is much like that, and in addition *enforces* that other ideal of personal rights and privileges. There are thousands of varieties of cacti and the one you buy today is the same as the one of centuries ago, but there are places where you can see the changes brought about by the advance of a variety from one climate to another until the plants at the extremes of the journey are entirely different in appearance. Through the centuries they have fought their enemies, blossomed and born fruit and seeds, scattered these seeds in the hope their children would find a better place to grow. In this way they have traveled through forest and swamp, over plain and mountain, and across land almost desert. We call about fifteen per-cent of them "desert types," but since nothing grows in the desert this a misnomer, however, the arid sections where these fifteen per-cent grow is desert like in its hot dry air and cool nights and that has probably given rise to the name. Take a section of many of the varieties of cacti, place it on a rock for six months or so, or let the entire plant experience a year or more of complete drought; plant the section or water the plant and a resurrection takes place almost while you watch. Befriend it further and your reward may be a blossom fourteen inches across and with an aroma all its own. But if you try to encroach upon the plant be sure your armour is in good order or the end of the battle will find the plant much as you found it. It seems to say "This is my property; respect my rights and I will give you food (some of the fruits are delicious) and protection (some plants make excellent hedges, others are used in the construction of huts, etc.)" How like many of us humans; "give me freedom of thought and I will give you many miracles not even dreamed of." Electricity and all the ways we use it now, the stem engine of today, the automobile, and a thousand and one other things we take for granted. How different and how alike are the red, white, black and yellow races and how different and how alike are the three tribes of cacti, big and little, skinny and fat, bald and hairy, bold or retiring, renegade or good citizen, stay-at-home or wanderer, "highbrow" or "throw-back," they are all there. Some are so miserly that their flowers are seldom seen

and others of the same size will completely hide themselves with one blossom. There is one notable difference between man and cacti, there are no blues in cacti blossoms. In the above I have embodied many reasons for enjoying the hobby; to learn of them until I can tell the difference between "Harry Jones," "Bill Jones" and "Walter Jones." "Harry is small and pale, "Bill" is tall and robust and "Walter" is red haired and freckle-faced. One of their cousins has spines that can be used for hat pins and another has fish-hooks; but they are all "Joneses." Then to go on to all the other "families" and note the differences is like new friends or finding new precious stones. So like and so different from the old. And doesn't our love for the old grow as we love the new? We travel here and travel there, but isn't it HOME we come back to? The more we travel the more we want to travel, but are always glad to get back home and stay there until the call of wanderlust gets too strong again. And so it is with this hobby. You are satisfied with the plants you have until you see "another beauty" and then you have a larger collection than the one you were so satisfied with. Here is another thought. Do you send souvenirs to your friends? Why? You will get just as much pleasure from giving your friend one of your duplicates. And he will like it as well as you did when someone gave you one. Maybe you were not so "crazy" about it at the time, either. And this brings up another reason for this hobby. The object of your affection can and will (if you help) reproduce itself many times and in several ways. To try these different ways and NOT ALWAYS be successful will awaken an interest that will take your mind from your troubles and give Nature a chance to take your troubles away from you. TRY IT. CHAS. R. COLE.

EDITOR'S NOTE: The above soliloquy contains a great many thoughts and is presented without the usual editing which has been known to disrupt the author's own style.

AFFILIATED NEWS

Conducted by ERVIN STRONG

Mr. Pat White, secretary of the Cactus and Succulent Society of Milwaukee, reports that Garfield Park in Chicago has a very beautiful array of grafted Schlumbergera's, that they are marvelous heavy plants and are doing well under the capable care of Frank Kranz.

We have been receiving numerous letters from members of our distant Affiliate Societies expressing their appreciation of the courteous attention that was accorded them on their visits to our local gardens this past summer. To our Affiliated members I wish to say that we will continue to do all we can to enable them to see the greatest possible number of gardens both on their route and at their destination.

The Midwest Cactus and Succulent Society are formulating a library of cacti and succulent literature. If you have any duplicate material or material that you are not now using, why not place it where it will benefit this group? I will be glad to forward any such material to them.

Mrs. Tom Kelk, member of the Cactus and Succulent Society of Oklahoma, sent in seeds of some of their local cacti for distribution amongst those who wish them; a portion of them have already been used to fill a request from one of our correspondents in Melbourne, Australia.

Members of the K. I. O. Cactus Club felt indeed favored when on November 4th, they were privileged to attend the dedication of the new Cactus Wing of the Krohn Conservatory in Eden Park, Cincinnati. The dedication was high-lighted by the "Lecture on Cacti" given by Ladislaus Cutak, noted cactus authority on curator of cactus at the Missouri Botanical Gardens in St. Louis. From all accounts, great care and forethought has gone into the planning of this project. During the past few years, noted gardens, including Missouri Botanical Gardens and The Huntington Botanical Gardens, have been visited to obtain planting data and cultural directions. The new addition is 45 ft. by 75 ft. with the peak of the roof estimated at 25 ft. The collection is expected to include several hundred specimens. To have such an outstanding collection available for study, K. I. O. Cactus Club is indeed fortunate. Notes from Mr. Cutak's talk follow in his answer to the question as to the meaning of the term succulent:

"The term is derived from the Latin meaning 'fleshy' or 'juicy,' and is applied to plants possessing greatly thickened leaves or stems for water-storage. However, the expression is used more or less broadly. Bulbous plants are generally excluded, although there is a certain amount of succulency involved in them. Begonias, geraniums, and Wandering Jews have a succulent tendency, but among collectors they are not regarded as succulents. Yuccas, dasylirions, and agaves are not 'succulent' in the purest sense although xerophytic in habit, but common usage has always associated them with this group and they are generally accepted as members. The most notable families with succulent peculiarities are the cactus (Cactaceae), orpine (Crassulaceae), fig-marigold (Aizoaceae), and the spurge (Euphorbiaceae). Other families containing a high percentage of succulent plants are the lily (Liliaceae), purslane (Portulaceae), milkweed (Asclepiadaceae), and amaryllis (Amaryllidaceae). A few succulents can also be found in the grape family (Vitaceae), the geranium (Geraniaceae), the daisy (Compositae), and Dioscoraceae.

"The grotesque shapes of many succulents are the direct result of the hard-fought struggle for mere existence. For ages the sun has beat down mercilessly on these plants and water has fallen less and less frequently, and the succulents have had to adjust themselves to such conditions if they were to survive. The cacti are possibly the highest developed examples of succulent desert plants, with the spurges running a close second.

"In the cactus family conservation has advanced so markedly that leaves are cast off entirely (except in such tropical genera as Pereskia, Pereskiopsis, and Quiabentia) or are reduced to small awl-shaped bodies which wither and fall after a short time, as in the Opuntieae tribe. In the more complex Cereiae tribe the leaves are absent, except in rare instances where they appear rudimentary on the young growth. Furthermore, cactus plants, especially those of the spheroid and columnar types, present the least surface exposure to the rays of the sun, and are further guarded by a waxy epidermis and abundance of radiating spines.

"Most succulents of the spineless variety, as crassulas, echeverias, mesembryanthemums, etc., have thickened leaves, gelatinous juices, and other protective devices in the form of closely set hairs and waxy secretions, which prevent excessive evaporation and conserve a constant water supply. Some of the fig-marigolds and haworthias, in order to escape the fierce African sun, have learned to bury themselves in the sand, except for the flat translucent tops and leaf tips which act as 'windows' and permit light to reach the underground parts. Because these plants have made radical adjustments in their mode of living, they have been enabled to maintain themselves as the dominating plant group in the desert regions.

"A good majority of succulent plants, and there are several thousand species to choose from, make excellent pot plants for the home. Even the monstrously large types can be utilized for this purpose if seedlings or cuttings are used. Whenever a tall plant becomes too large or heavy for handling easily, it can be topped or cut back. This paves the way for adventitious shoots to develop, which when of sufficient size can be taken off the maternal plant and grown on as individual specimens. Other large succulents, such as the agaves, aloes, etc., produce numerous suckers or offshoots which can be severed from the adult plant and grown in smaller pots.

"Because most succulents possess a leather-like epidermis which limits the evaporation of the plant juices, they are able to resist the dry atmosphere of living-rooms far better than other types of plants. Many can be grown out of doors in the northern states in summer, and several hundred species, the sedums, sempervivums, talinums, certain cacti, and the like, are hardy enough to withstand our winters. There is no limit to what can be grown in sunrooms anywhere."

FROM CINCINNATI, OHIO

What curious things dreams are. Mrs. Carwardine, *in Saskatchewan dreams of taking her cacti out of* their pots, wrapping them in paper, and putting them away for the winter. (Cactus Journal, Feb., 1939). Several years ago I was told that this practice was followed in Germany, but have forgotten my authority. Later came Backeberg's "Calendar" or "Handbook" and for October he says, "Where space is limited, collections can, if necessary, be taken out of their pots, wrapped in newspaper and wintered in a cellar neither too warm nor too cold, stocks stood upright in frames protected by layers of paper from pricking each other." At another point he says, "plants wintered in a cellar must be looked over often, according to conditions."

So Mr. Bullard recommends forgetting that there is *such a thing as sand. I wonder if he would not change* his advice to us who are situated where the only soil available is 100% clay loam? Without amelioration of some kind it will pack and become as hard as the clay pot itself. So I continue to use sand. (And coal ashes.)

On the other hand I have forgotten about the use of *lime.* Our local sands carry so much of it that I don't find any further addition is necessary.

Mr. Bullard's method of potting is far and away the best. Does he ever, when he wants to do an especially good job, first wet the roots, then sift over them some of his dry potting soil, seeing that all the root surfaces are separated and completely covered with soil before putting them in the pot?

I have been waiting for the "L" section of the glossary to appear to find in it the answer to a question, but it isn't there, nor can I find it in my big "Websters." What *is* leafmold? Is it pure organic matter, resulting from the decay of leaves, or is it the top layer of the soil which has become impregnated with the products of this decay? Sometimes the word seems to mean the one and sometimes the other.

G. A. GRAY.

LEAFMOLD

The definition of leafmold was omitted from the Glossary because there seems to be a difference in its meaning in various sections. The Garden Dictionary says leafmold is synomynous with humus—a top soil composed principally of decayed vegetable matter.

In the West, leafmold means that layer of partially decomposed leaves overlying the humus in forest areas. This vegetable matter, dried, is offered in sacks by nurserymen and seed stores sometimes intermixed with humus.

When our leafmold is again moistened, decomposition starts rapidly and this makes the best natural food for xerophytic plants.

Many succulents, notably Mammillarias, are frequently found in rock pockets containing only decomposed leaves although sometimes humus is also present.

Either leafmold or rich humus should be used in greater or lesser quantities on succulents—the quantity varying with the natal habits of each species.

I do not believe a healthy growth can be produced on any xerophytic plant in sand alone but I do believe that sand must be added to certain soils to break them up and permit air to reach the roots.

W.T. M.

SOILS

Speaking of soils, the conception of the various types is quite vague with most amateurs. Dr. Tyson, in the *Gardener's Chronicle,* defines them as follows:

"Gardeners are interested in the soil because, for the present at least, it is the most practical and economical medium in which to grow land plants, such as trees, shrubs, grass, flowers and vegetables. These plants require, in addition to mineral nutrients, air and water, mechanical support which is secured by their roots penetrating the numerous channels between the various-sized and shaped particles.

The soil is composed of solid particles of mineral material which has resulted from the disintegration and decomposition of rocks together with organic matter, air and water is contained in the mass. The suitability of the soil as a medium for plant growth is controlled by the proportion of the various sized mineral particles and the organic matter, water and air present. Mineral soil particles have been classified as sand, silt and clay on the basis of the size of the particles and because these groups have essentially different qualities. Mineral partices which are smaller than .002 inch in diameter are called clay; those between .0002 and .002 inch silt, and those between .002 and .08 inch sand.

The finest soil material, clay, is very sticky, plastic and cohesive when wet. This is the chemically active ingredient in soils which has a very great attractive force for water and plant foods. For this reason, a good proportion of clay is essential in the formation of a fertile productive soil. However, the particles are so small and lie so closely together when no coarse material is present that drainage and aeration are impeded. Therefore, sand, especially some coarser sand, is needed to furnish large channels between the particles through which water and air may pass freely.

Organic matter is a third ingredient necessary in a fertile productive soil. First, it is a source of energy for the living organisms in the soil if plants are to grow normally. In addition, finely divided organic

matter, commonly called humus, is even more useful than clay in maintaining soil moisture and available nutrients at a high level, as it has great attractive force for them. Again, organic matter has a wonderful effect on the physical properties of the soil. It lessens the sticky cohensive powers of clay and helps make the sand more cohesive. Sand and clay mixed together tend to harden into rock-like material when dry, but if organic matter is present a friable soil is produced. The soil which contains a good percentage of organic matter is easier to work than that which lacks it.

Loam soils, technically described as containing less than twenty per cent clay, less than fifty per cent silt, and less than fifty per cent sand, are the most desirable for the production of practically all plants grown in gardens. These are soils in which neither the fine nor coarse fractions predominate, but the good qualities of each are present. Soils which are too sandy are droughty and usually lack plant food elements. On the other hand, soils which contain too much clay are hard to handle and usually unsatisfactory because of poor drainage.

Nitrogen, phosphorus and potassium are the three mineral elements which have been found to be almost universally lacking in soils. These are the ingredients found in commercial fertilizers, and although other mineral elements are receiving attention and study at present, these three remain the important ones in all parts of the country.

Nitrogen is an essential constituent of proteins, of which chlorophyl, the green coloring matter of plants, is an important one. An abundant supply of nitrogen in plants results in dark green foliage and active vegetative growth. Excess nitrogen causes rapid growth, softness of tissue and a general weakness of the plant, which renders it less resistant to disease infection and injury. At flowering time, excess nitrogen causes the plant to resume active vegetative growth, retarding flower formation.

Phosphorus compounds are found in all plants and are especially abundant in flowering parts and seeds. They promote germination of seeds, establishment of seedlings, root growth and general plant vigor. Phosphorus tends to hasten maturity of plants, speeding up the formation of flowers and seeds.

Potassium is important in the formation and transportation of starch, sugar and other carbohydrates within plants. It reflects this in producing plants with stiff stalks and healthy, disease-resistant growth. Excess potassium results in an increase in the water contents of plants and resistance to droughts and frost injury, and delays maturity of plants."

SEATTLE NOTES

Dear Editor:

The picture of Mr. Gates in the October Journal was very interesting. His attitude would indicate that he would rather give ten dollars and his collection to have it published. And who could blame him. I seem to remember that you made a trip up there, too. Was that after you saw the picture?

Your failure to hear very much from our group this year is because we are using Mr. Marshall's lectures, a review of "Borg" and some nomenclature from the JOURNAL each month. I sent notes of our very successful show to Mr. Marshall.

My plants are in splendid condition after their summer out of doors. We covered the frame with cellophane screen* and it required no further treatment to keep out the sun. The sides are removable and the top is hinged so that at all times we were able to give the plants good ventilation, and at the same time maintain a temperature of 85 or 90 degrees. When I could maintain this temperature with the top wide open to admit the direct rays of the sun, I did so. They were so perfectly hardened that it did not result in burning and I have some very beautiful plants to show for it this fall. It had a tendency to lengthen and brighten the spines and also resulted in the development of seed pods. I suppose too, that pollination is more successful out in the open. I think as a group, it improved the Lobivias most. The spine development, which was always weak in the house, changed entirely, and some of them do not look in the least like the plants I had a year ago. Another interesting change was a crested *Notocactus scopa;* the spines on this plant had always been white, but a piece taken off and regrafted developed pink spines.

Some of my grafts have made a remarkable growth, this no doubt due to the heavier stock that I am using. But I still stick to the Cereus hybrids.

I enjoyed meeting Mr. Frank Curtis of Sacramento. He says that he has been interested in cacti since he was nine years old, which should make him rank among some of the old timers in collecting. He regrets very much that so little interest is shown in them in his locality.

Some of the desirable succulents for the northwest are as follows: This list can only be an incomplete one because I have specialized on cacti and therefore do not recognize many of the other succulent plants, but the ones I do mention are fairly common here and I am sure of the names. Most of these would be easier flowered than cacti, I believe, if given a little intelligent care. Some that are in flower in January are: of Kalanchoes, Aloes, Gasterias, *Euphorbia splendens* (this seems to bloom for everyone, and at any time of the year) *Kleinia articulata, Crassula portulacea* and *C. arborescens,* Echeverias (these must have a cool room or they are inclined to get leggy).

Stapelias flower during the summer and into the fall as long as the weather is sunny; they grow a little too fast to make desirable house specimens, and of course the odor is so undesirable. Allowed to develop in a protected place out of doors during the summer months most of them flower very freely. Lithops, Faucaria and Pleiospilos also flower in the late summer, but will be stronger if they can spend some of the summer out of doors. Sanseveria does well in even the darkest rooms. Sempervivums are very desirable rock garden plants as are many of the Sedums and there may be others that would stand some of our winters, yet would perish when the mercury takes a dip. Indoors, I believe that most of the succulents would stand our house temperatures better than cacti as so many of them are winter growing. Our house temperatures range from 70 degrees on up in the winter, and are probably cooler than that in the summer time, generally.

I have a hybrid Gasteria that flowered some years in December and some years in June. I don't know whether it is lack of consistent treatment that causes this or whether it is blooming every eighteen months.

Some Agaves and Yuccas are hardy out of doors here and I recently saw a formal bed bordered with Echeverias that have as yet not been affected from frost.

MRS. HARRY LEWIS.

*See illustration, page 95.

TOP LEFT: *Epiphyllum latifrons* as flowered by Ruth Hodgson in Wisconsin. TOP RIGHT: Mrs. Harry Lewis and her cellophane screen summer frame. CENTER LEFT: C. W. Armstrong's *Cephalocereus senilis* covered with Canadian rain drops. CENTER RIGHT: *Stapelia peglerea* is easily flowered by Ruth Hodgson in Wisconsin as a house plant. BOTTOM LEFT: A modernistic Christmas tree using a *Cactus intortus*. RIGHT: Dr. Jacolyn Manning decorates an African *Aloe arborescens* with Christmas stars and tinsel.